

APPENDIX 7

EXAMPLE OF WATER QUALITY MANAGEMENT PLAN

DESCRIPTION

- A. The Water Quality Management Plan (WQMP) is designed to (i) assess the impacts of waste discharges from irrigated lands to surface waters through source identification; (ii) determine the degree of implementation of management practices to reduce discharge of specific wastes that impact water quality; (iii) determine the effectiveness of management practices and strategies to reduce discharges of waste that impact water quality; (iv) determine concentration and load of waste in these discharges to surface waters; and (v) evaluate compliance with existing narrative and numeric water quality objectives to determine if additional implementation of management practices are necessary to improve and/or protect water quality.
- B. The WQMP will include a plan for additional monitoring to demonstrate progress towards attainment of the water quality benchmarks. Follow-up monitoring of discharges that do not meet the water quality benchmarks and/or water quality objectives shall be conducted to improve understanding of the nature and source of the problem, identify the pollutant sources, and provide information on management practices that will attain the water quality objectives. Because forensic chemistry and other analytical approaches can rapidly increase monitoring costs, problem areas may be prioritized relative to severity of problem, availability of other data sources to inform decision-making, and other considerations. In order to address high priority water quality problems, the Executive Officer may require additional monitoring.

The WQMP should contain the elements described below that apply to the problem:

(1.) Pesticide Use Evaluation

If applied pesticide concentrations exceed Basin Plan, applicable CTR or TMDL load limits, then the discharger must complete an assessment of the most significant factors influencing the amount of pesticides in surface waters, including the timing of pesticide applications, the application rates, the amounts of pesticide applied, and the points of application (all of these factors can be referred to as "use pattern"). This information can be found in the pesticide use reports submitted by Individual Dischargers and participants of Discharger Groups to the County Agricultural Commissioners and the Department of Pesticide Regulations. Changes in pesticide concentrations at specific monitoring sites needs to be compared to pesticide use patterns for land areas upstream of the monitoring sites. By comparing these changes, a discharger may discover how a change in pesticide use patterns could impact water quality. Changing pesticide use patterns is a management practice and may be included in a WQMP, if applicable.

(2.) Management Practice Effectiveness and Implementation Tracking

If water quality exceedances are found, Individual Dischargers or Discharger Groups must compile additional information on the type of management practices that are being used, the degree to which they are being implemented on the property or in the Discharger Group area, and how effective the practices are in protecting waters of the State. Data should be collected in several broad areas; 1) fertilizer and pesticide application and post-application practices; 2) management practices to address other wastes (salt, sediment, nitrogen, etc.), and 3) operational practices. This information may be used to evaluate the effectiveness of management practices on reducing loading of constituents of concern. If more effective management practices are available and practicable, a time-specific proposal to change management practices should be described. The predicted effects on discharge quality should be characterized in sufficient detail to provide confidence that the WQOs will be attained in a timely manner upon implementation of the management practice(s).

- C. Should monitoring data indicate continued compliance with applicable receiving water limits, the Executive Officer is hereby authorized to use his or her discretion to reduce the required frequency of monitoring for the Individual Discharger or Discharger Group, or to reassign a risk level to the discharge that reflects the results of the monitoring data. The monitoring data used to make this determination shall include, at a minimum, dry and wet season monitoring data for one year. Once a determination is made, the Executive Officer shall notify the Individual Discharger or Discharger Group of the revised Monitoring and Reporting program, if appropriate.

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- A. The WQMP shall cover the topics listed above. However, the required information should be contained in responses to the questions which follow, where they apply. Dischargers may select to respond to these questions for each water quality problem identified in their monitoring and reporting plan to meet the requirements of the WQMP.

(1) What is the name and location of the facility?

- B. Definition of Irrigation Practices and Discharges

(1) Describe your irrigation practices by crop, season, hours per day and location. Do you measure your irrigation efficiency? By what method? How often? What steps do you already take to optimize your irrigation efficiency? What is your leaching fraction? How much water do you use in gallons per day?

- (2) If irrigation efficiency could offset the identified water quality problem, what methods might increase your irrigation efficiency and decrease your water movement below the root zone or leaving the property as surface runoff? What reductions would this method provide in leachate or runoff in gallons per day?
- (3) Do you observe tile drain discharge from your property? How much? How often? What steps do you already take to limit the flow off your property?
- (4) Do you observe discharge from your property during storms? How much? How often? What steps do you already take to contain the flow on your property?

C. Definition of the Water Quality Problem

- (1) Describe the water quality problem identified by monitoring or other methods, including a summary of the analytical data.
- (2) Describe the pollutant associated with this water quality problem. Examples are; (1) Dissolved oxygen depression in discharge may be caused by too much organic material. (2) pH levels in discharge may be affected by the addition of ammonium, acid, or salts to soils. (3) DDT or DDE may be present in the soil which moves into the water, even if it has not been applied in recent memory. (4) Modern pesticides may be washed into water or carried into soil which enters the water and measurable in discharge for months or years. (5) Salts in discharge may come from incoming water supply, additives, natural groundwater sources or upstream waste discharge. (6) Nitrogen or ammonia may be added to discharge by fertilizer not consumed by the plant, plant debris in mulch or crop waste, or by incoming water supply or upstream waste discharge. (7) Toxicity in discharge may be related to modern or historic pesticides acting together, if they are not measured independently, oxygen or pH problems, or any of the above problems in combination. If the cause of the water quality problem cannot be identified, select a method to discern the cause and time-specific milestones to acquire this information.
- (3) Describe the sources of the pollutant or water quality problem and the amount of pollutant added from that source, if known. If the source of the pollutant is not

known, describe a method to identify the source and time-specific milestones to acquire this information.

- (4) If some of the sources of the pollutant are non-agricultural or on a property not under the control of the discharger, describe those sources and quantify the amount of pollutant added from that source, if known.

D. Statement of Existing and Proposed Management Practices

- (1) Describe the existing management methods in place to control this pollutant, specifying the area, crops, frequency and season, date of installation or initiation, documentation, and the source of the technical reference on the effectiveness of the method.

- (2) Describe the proposed management methods to control this pollutant by area, crop type and season giving time-specific milestones for the implementation and the anticipated reduction in the amount of the pollutant, if known. Describe the installation or implementation of this method in time-specific milestones.

- (3) Where pesticide water quality objectives are exceeded, describe the factors influencing the amount of pesticides discharged to surface waters including the timing of pesticide applications, the application rates, the amounts of pesticide applied, and the points of application (all of these factors can be referred to as "use pattern"). Are these practices consistent with the UC cooperative extension Integrated Pest Management guidance? Are these practices consistent with the label directions on the pesticide? Describe the existing protocols for spill containment, transport, storage, and safety training. If you contract others to apply the pesticide, provide a written statement from them answering these questions.

- (4) Describe the methods for determining the impact of the proposed management method, including inspection, sampling, and/or water quality monitoring with time-specific milestones.

- (5) Provide technical documentation that the management method will result in a change in water quality, or evidence that it is recommended by the UC Cooperative Extension, National Resource Conservation Service or Resource Conservation Service or other Commodity Group. If the management method is related to materials management or personnel activities, then the management method may describe preventative maintenance, security, inspections and records and employee training.
- (6) Provide a schedule for implementation and revision of management practices, including monitoring to evaluate effectiveness of management practices.

- E. The Individual Discharger or Discharger Group shall update the WQMP whenever there is a change in the individual facility or the Discharger Group area which materially increases the generation of the pollutants or the potential release of pollutants to the receiving waters. The Plan shall be amended as appropriate. Any such changes to the WQMP shall be consistent with the objectives and specific requirements listed above. All changes in the WQMP shall be reported to the Regional Board and/or State agency in writing.
- F. At any time, if the WQMP proves to be ineffective in achieving the general objective of preventing and minimizing the generation of pollutants and their release and potential release to the receiving waters and/or the specific requirements above, the WQMP shall be subject to modification to incorporate revised BMP requirements.
- G. The WQMP shall be consistent with the objectives above and the general guidance contained in the publication entitled *Guidance Manual for Developing Best Management Practices (BMPs)* (USEPA, 1993), Natural Resource Conservation Service's Field Office Technical Guides, University of California Cooperative Extension's Farm Water Quality Planning documents, and other management practice information developed to reduce nonpoint source pollution from agricultural operations.